

REMARKS

Claims 1-64 are pending in this application. By this Amendment, claims 1-3, 5-8, 10-12, 15, 18, 21, 23, 27-29, 33-35, 37-39, 41, 43-44, and 47-51 are amended and claims 54-64 are added. Support for the amendments and new claims can be found, for example, in Figs. 6A, 11 and 12. No new matter is added.

I. Personal Interview

The courtesies extended to Applicants' representative by Examiner Bowers at the personal interview held September 8, 2010, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicants' record of the interview.

II. Rejoinder of Withdrawn Claims

Applicants respectfully request rejoinder of claims 27-46 when independent claim 1 is found allowable. Rejoinder of process claims is proper when the process claims either depend from or require all the limitations of an allowable claim. See MPEP §821.04(B). For example, independent process claim 27 recites all of the limitations of apparatus claim 1, and thus should be rejoined upon allowance of claim 1.

III. 35 U.S.C. §103(a)

The Office Action rejects claims 1-8, 11-22, 26 and 47-53 under 35 U.S.C. §103(a) over Hassanein (U.S. Patent No. 6,046,046) in view of Dennehey (U.S. Patent No. 5,462,416). Applicants respectfully traverse the rejection.

Claim 1 recites "a tube frame removably connectible to the portable housing and configured to hold a second set of tube segments at respective predetermined positions where they are directly connectible to the first set of tube segments through at least one of the one or more openings, each of the predetermined positions corresponding to a location of the one or more openings, wherein the tube frame is adjacent to the portable housing at at least one of

the predetermined positions." In rejecting claim 1, the Office Action admits that Hassanein fails to disclose a tube frame, but alleges that Dennehey overcome the deficiencies of Hassanein. The Office Action further alleges "[o]ne of ordinary skill would have recognized that the tubes emerging from the top of the Hassanein['s] portable housing are largely unorganized (see Figures 1 and 4-6), and therefore would have been motivated to consolidate and manage them using a tube frame in order to prevent tangling or damage." Applicants submit that one of ordinary skill in the art would not have combined Hassanein and Dennehey for at least the following reasons.

Hassanein's Figs. 1, 5 and 6 are schematic diagrams and therefore one of ordinary skill in the art would only have interpreted these figures as showing how each piece of structure in Hassanein interconnects with other pieces of structure. Thus, one of ordinary skill in the art would not have interpreted these figures as suggesting any level of organization or disorganization.

With respect to Hassanein's Fig. 4, the various tubes shown as connecting to Hassanein's plastic cover assembly 22 would not benefit from, and in fact should not be connected to, a tube frame because Hassanein's tubes are already located in an organized fashion and movement of the tubes is important. As discussed in Hassanein at col. 11, lines 22-44, and as shown in Hassanein's Figs. 2 and 3, Hassanein's various lines are connected to ports in Hassanein's plastic cover assembly 22 based upon locations necessary to connect to the organ contained in Hassanein's device. In particular, Hassanein states at col. 11, lines 28-30, "[t]he cannula plate 106 also positions each cannula in the proper location while the organ 12 is connected to perfusion system 10." Thus, Hassanein's connections are organized and in a particular location based upon the organ which is being maintained.

Furthermore, the lines running out of Hassanein's plastic cover assembly 22 need to be adjustable and not restrained. In particular, Hassanein's afterload line 60 needs to be

adjustable in height to maintain the correct afterload pressure on the heart and therefore must remain freely removable. See Hassanein at col. 8, lines 48-51. Also, because of the line between Hassanein's selector valve 50 and tee 56, the line connected to Hassanein's filter 46 must also remain freely movable or it would impede the movement of Hassanein's afterload line 60. Thus, two of the three lines exiting from Hassanein's plastic cover 22 must remain freely movable and therefore adding a tube frame would modify Hassanein so that the device would no longer be suitable for its intended purpose. See MPEP 2143.01(V). One of ordinary skill in the art would not add a tube frame to the single, remaining line as it does not appear to provide any benefit to Hassanein's device.

Further, as discussed during the personal interview, if one of ordinary skill in the art were to add a tube frame to organize the tubes between devices on Hassanein's lower shelf 146, then such a tube frame would not be adjacent to the portable housing at at least one of the predetermined positions as recited in claim 1. That is, because the tube frame would be located well away from Hassanein's cover assembly 22, which includes the only features in Hassanein that could reasonably be interpreted as the claimed one or more openings, the combination of Dennehey and Hassanein would not have rendered obvious all of the features of claim 1. Thus, the combination of Hassanein and Dennehey fails to disclose, and would not have rendered obvious, all of the features of claim 1.

Claim 47 recites "a tube frame configured to hold a first set of tube segments at respective predetermined positions where they are directly connectible to a second set of tube segments of a portable housing for holding the organ or the tissue through at least one of one or more openings, wherein the tube frame is adjacent to the portable housing at at least one of the predetermined positions." Thus, claim 47 is patentable at least for the reasons discussed above with respect to claim 1.

Claim 49 recites "wherein the one or more openings of the portable housing are on a side surface of the portable housing and are horizontally aligned on a same horizontal plane." As tentatively agreed during the personal interview, Hassanein and Dennehey fail to disclose these features because Hassanein's plastic cover assembly 22 includes openings that are disposed vertically and these opening are specifically designed to interface with the organ being maintained. Further, there is no disclosure in either reference that one of ordinary skill in the art would have interpreted as suggesting that there would be any benefit to moving the openings to a side of Hassanein's preservation chamber 20.

Claim 50 recites "wherein the one or more openings are horizontally aligned on a same horizontal line." As tentatively agreed during the personal interview, Hassanein and Dennehey fail to disclose, and would not have rendered obvious, these features at least for the reasons discussed above with respect to claim 49.

Also, claims 2-8, 11-22, 26 and 48-53 are patentable by reason of their dependency from one of independent claims 1 and 47, as well as for the additional features they recite. Applicants respectfully request that the rejection be withdrawn.

The Office Action rejects claims 9 and 10 under 35 U.S.C. §103(a) over Hassanein in view of Dennehey and Toledo-Pereyra (U.S. Patent No. 4,186,565). Applicants respectfully traverse the rejection.

The rejection of claims 9 and 10 is premised upon the combination of Hassanein and Dennehey disclosing, or having rendered obvious, all of the features of claim 1. As discussed above, these references fail to do so. Further, Toledo-Pereyra fails to overcome the deficiencies of Hassanein and Dennehey. Thus, claims 9 and 10 are patentable by reason of their dependency from independent claim 1, as well as for the additional features they recite. Applicants respectfully request withdrawal of the rejection.

The Office Action rejects claims 23-25 under 35 U.S.C. §103(a) over Hassanein in view of Dennehey and Fahy (U.S. Patent No. 5,586,438). Applicants respectfully traverse the rejection.

The rejection of claims 23-25 is premised upon the combination of Hassanein and Dennehey disclosing, or having rendered obvious, all of the features of independent claim 1. As discussed above, Hassanein and Dennehey fail to do so. Further, Fahy fails to overcome the deficiencies of Hassanein and Dennehey. Thus, claims 23-25 are patentable by reason of their dependency from independent claim 1, as well as for the additional features they recite. Applicants respectfully request withdrawal of the rejection.

New claims 54-64 are also patentable. For example, claim 54 recites "wherein tube segments of the first set of tube segments and the second set of tube segments that are disposed at the one or more openings are disposed and aligned horizontally at the one or more openings." Claims 59 and 61 include similar limitations. Claims 57, 60, 62 and 63 refer to horizontally aligned openings. As tentatively agreed during the personal interview, the applied references do not disclose such features and there appears to have been no benefit or reason in the art for incorporating similar features in Hassanein. Claim 55 recites that "the portable housing, the first set of tube segments, and the second set of tube segments form at least part of a closed fluid circuit, the closed fluid circuit being configured to allow the portable housing, the first set of tube segments, the second set of tube segments and the tube frame to be installed and removed as a unit without breaking the closed fluid circuit." Claims 56, 58 and 64 include similar limitations. As tentatively agreed during the personal interview, these features are not disclosed and would not have been obvious in view of the applied references because modifying Hassanein to include similar features would require that all of the components on Hassanein's device be removable. For example, Hassanein's centrifugal pump 34, membrane oxygenator 38 and water heater 40 would need to be made removable to

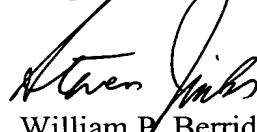
prevent a closed circuit from being broken. Additionally, it would have been necessary to modify Hassanein's square apertures 174 and 176 to allow the various lines that are disposed through these apertures to be removed. There is no suggestion or reason in the applied references to make such modifications. Thus, claims 54-64 are also patentable over the applied references.

Additionally, claims 54-63 are patentable by reason of their dependency from one of independent claims 1, 27 and 47, as well as for the additional features they recite.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:
Amendment Transmittal

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